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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,553

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EXAMINER

ADDISU, SARA

ART UNIT

PAPER NUMBER

3724

MAIL DATE

DELIVERY MODE

12/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,553	Applicant(s) MURAKAMI ET AL.	
	Examiner SARA ADDISU	Art Unit 3724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/24/08 has been entered.

Currently, claims 13-25 are pending in this application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- “claim 15 recites “first, second, third and fourth flat surfaces” while claim 13 recites “flat surfaces extend in a direction substantially parallel to the longitudinal axis of the shank”. Applicant has not defined clearly if the flat surfaces of claim 13 are different from the four flat surfaces of claim 15.

Double Patenting

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The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 13-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 of copending Application No. 10/994,332

This is a provisional obviousness-type double patenting rejection.

For example:

- Claim 13 and 15 define the pocket of the vibration suppression piece to be four sided flat surfaces where 2 of the flat surfaces are parallel to the longitudinal axis and 2 of the other flat surfaces are perpendicular to the longitudinal axis, while claim 1 of 10/994,332 defines the pocket to have a shape of a rectangular solid.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-25, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over New (USP 4,061,438) in view Cobb (USP 5,518,347).

Regarding claims 13 and 14, New teaches a vibration suppressing cutting tool comprising a holder having a shank (1) formed with a pocket (7: sleeve is considered to be part of the shaft) in which a vibration suppressing piece (10) which is not coupled to said holder is received so as not to be able to come off said pocket ('438, figure 1). New also teaches pocket (7) having inner walls : end walls (8: flat surface) and side wall (9: cylindrical surface) wherein at least portions of the inner wall (i.e. end wall, 8) of said pocket that knock against said vibration suppressing piece (10) or portions of the surface of said vibration suppressing piece (i.e. the diameter portion/ the part facing wall 8, which is flat) that knock against said inner wall (8) of said pocket are flat surfaces ('438, col. 3, lines 15-18). Furthermore, New teaches clearance between the vibration suppressing piece (10) and wall surfaces (8,10), therefore said vibration suppressing piece (10) knocks against the wall surfaces wall when the holder

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vibrates during cutting ('438, col. 3, lines 24-33). Furthermore, regarding claim 21, New teaches the tool being an overhung boring bar for machining bores of non-uniform diameter along their length, therefore, the cutting tool is expected to generate vibrations causing displacement in the horizontal direction (arrow X below) during machining, whereby the vibration direction (X) is substantially perpendicular to the first and second flat inner wall surfaces (X1, X2) ('438, col. 1, lines 5-8) (note: this concept is also evidenced by Muller et al., USP 3,663,116, col. 1, lines 22-25). New also discloses although chatter is a resonance phenomenon, the frequency of chatter vibrations is not solely dependent on characteristics of the boring bar, but on several other factors as well, such as the cutting conditions and the material of the workpiece ('438, col. 6, lines 52-61). Regarding claim 15, New teaches said pocket having first and second flat inner wall surfaces (X1, X2: see figure below) opposed to each other, and wherein said vibration suppressing piece (10) has third and fourth flat surfaces (Y1, Y2: see figure below) and is received in said pocket such that said third and fourth surfaces face said first and second surfaces, respectively, with a clearance defined between said first and second surfaces and said vibration suppressing piece, said first, second, third and fourth surfaces being oriented so as to cross the direction in which said holder vibrates during cutting. Regarding claim 16, New discloses all of the claimed limitations (i.e. pocket and vibration suppressing piece having flat surfaces that are perpendicular to the central axis of the shank wherein the opposed inner wall surfaces X1, X2 of said pocket having a greater area than other surfaces Y1, Y2, of said vibration suppressing

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piece: see figure above) except for the sections being rectangular). It would have been an obvious matter of design choice to make the different portions of the vibration suppressing piece of whatever form or shape was desired or expedient to fit the bore/pocket it is received in. A change in form or shape is generally recognized as being within the level of ordinary skill in the art, absent any showing of unexpected results. Regarding claim 17, New teaches clearance of 0.10 to 0.13 mm and although the actual choice of length and diameter of the damper mass is not critical, the best results are attained with a clearance in the range 0.107 to 0.122 mm (which reads on the claimed limitation 0.01- 0.5 mm) ('438, col. 3, lines 23-30). Regarding claim 22, New teaches a cutting tool having a damper assembly consisting of a closed cavity in the bar in which is located a damper mass having a damping clearance around it, and forward of the cutting tool a second damper assembly which also consists of a closed cavity containing a damper mass surrounded by a damping clearance ('438, figure 3 and col. 4, lines 29-38). Regarding claims 18 and 19, New teaches in figures 1 and 2, said pocket having a width that is 20-100% of the diameter of the shank, a height of 5-70% of the height of the shank and an axial length of 50-250% of the diameter/height of the shank. Furthermore, New teaches the actual choice of length and diameter of the damper mass is not critical ('483, col. 1, lines 27-29). Regarding claim 20, New teaches the shank being made of cylindrical steel tube (2) while the vibration suppressing piece (10) is made of heavy alloy ('438, col. 3, lines 4-5 and lines 18-24). Regarding claims 23 and 24, New teaches a blind hole and Examiner is considering the sleeve (7) to be the sealing means (also see

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figures 9 and 10). Regarding claim 25, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the shank and the head separate pieces, because it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art.

However, New fails to teach flat surfaces that extend substantially parallel to the longitudinal axis of the shank.

Cobb teaches a damping system for use in reducing vibrations associated with metal cutting and tooling whereby the damping system is located in a boring bar, an end mill, a modular tool section or the spindle/tool holder of the metal cutting machine ('347, figures 1 & 2 and abstract). Cobb also teaches a tool holder having a shank formed with a pocket in which a vibration suppressing piece (9) is received ('347, figures 1 & 2). Furthermore, Cobb teaches inside a tool such as a boring bar or an end mill, the damper mass may conveniently be cylindrical, while in a non-rotating application, the damper mass may be of any convenient shape ('347, col. 4, lines 40-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify New's vibration suppressing mass (thus also the cavity walls) flat, as taught by Cobb since Cobb teaches any convenient shape may be used depending on the application ('347, col. 4, lines 40-47). (also note that New teaches a boring bar and a boring operation can be performed by either rotating the tool or a non-rotary tool with a rotary workpiece).

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/Sara Addisu/
Examiner, Art Unit 3724
12/11/08

/Boyer D. Ashley/
Supervisory Patent Examiner, Art Unit 3724